Multi-dominance, Right-Node Raising and Coordination[1]

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This paper argues, following Barros and Vicente (2011), for a hybrid account of right-node raising as involving either ellipsis or multi-dominance. We demonstrate that the two analyses are not in free variation, due to a restriction that multi-dominance loops can only be closed under coordination. As a consequence, right-node raising in non-coordinate contexts does not show the hallmarks of multi-dominance, but rather behaves like ellipsis. Our argument is built on the characteristics of right-node raising in both nominal and verbal domains, as evidenced by scope, cumulative agreement, relational adjectives and morphological mismatches. The paper concludes with a brief assessment of the implications of the restriction that multi-dominance loops must be closed under coordination.

Keywords: right-node raising, multi-dominance, ellipsis, coordination.

1. Introduction

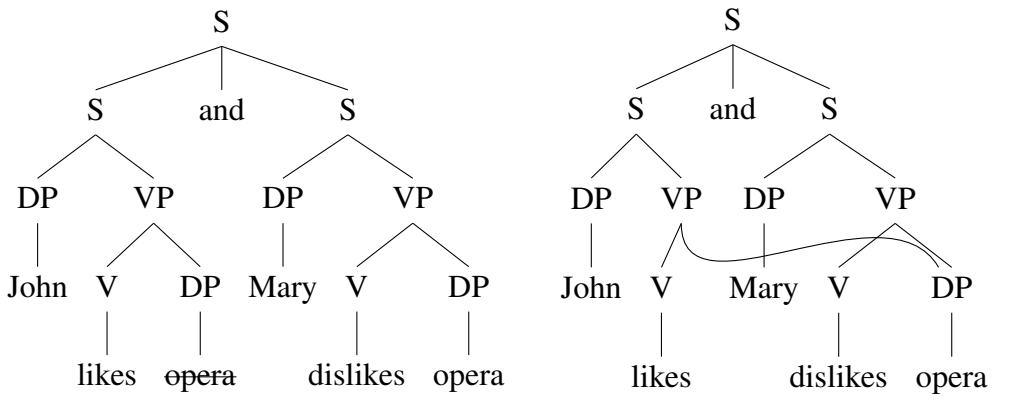
The aim of this paper is to explore under which conditions universal grammar permits multi-dominance. We can only approximate the answer to this question. Multi-dominance has been used to account for a bewildering set of phenomena, ranging from movement to parentheticals, and evaluating results in so many different empirical domains clearly goes beyond what can be achieved in a single publication. Our strategy is therefore to look in detail at a single construction for which multi-dominance seems relevant, namely right-node raising, and then consider the implications of our findings in a broader context.

We argue, following Barros and Vicente 2011, that right-node raising can be the output of two distinct derivations – one involving ellipsis (that is, a category left unrealized in the mapping to PF), the other involving multi-dominance (that is, a category dominated by two nodes). The two options are illustrated below for *John likes, and Mary dislikes, opera*.[2]

[1] For discussion of the English data reported in this paper (both new and old), we thank Lily Kahn, Louie Pollock, James White and Greg Williams.

[2] Other hybrid analyses have been proposed by Valmata 2013 and Hirsch and Wagner 2015. These authors explore the possibility that right-node-raising strings can be derived either by across-the-board movement or ellipsis (although Hirsch and Wagner do not commit to this view). We assume, following McCloskey 1986, Abels 2004 and De Vos and Vicente 2005, among others, that across-the-board movement is not an option (contra Ross 1967 and Sabbagh 2007).

(1)



Right-node-raising as ellipsis *Right-node raising as multi-dominance*

The argument presented by Barros and Vicente is that the properties of right-node raising come in two sets. The first set comprises of a tolerance of vehicle change and of morphological mismatches; the second comprises of cumulative agreement and the ability to license internal readings of relational adjectives. As it turns out, both properties from the first set or both properties from the second set can be present in a given instance of right-node raising. However, it is never possible to mix properties from the first and second sets. This suggests, of course, that there are two discrete procedures that can generate right-node-raising strings.

A dual analysis of right-node raising faces an uphill struggle, as proponents of analyses that treat right-node raising as a unitary phenomenon can claim an important conceptual advantage: they do not have to explain why two apparently very different processes are subjects to very similar constraints. We attempt to strengthen the case made by Barros and Vicente in three ways. (i) We address the conceptual set-back associated with the dual analysis by introducing a PF constraint that regulates right-node raising. This constraint, which is based on Wilder (1999) and subsequent literature, cannot distinguish between right-node-raising-as-ellipsis and right-node-raising-as-multi-dominance, and thus renders right-node-raising strings structurally ambiguous, all else being equal. (ii) We increase the insight afforded by the dual analysis through new explanations of why multi-dominance licenses internal readings of relational adjectives and cumulative agreement. (iii) We provide novel data supporting the dual account, by looking at right-node raising in non-coordinate structures (see Hudson 1976), and in the nominal domain.

The generalization that emerges from our exploration of right-node raising is that multidominance loops can only be created under coordination. That is, properties of right-node raising that are attributable to multi-dominance are systematically absent in

non-coordinate structures. We explore the consequences of this generalization for the bigger question we are interested in: where can we expect to find multi-dominance structures?

2. What Divides and What Unites Right-Node Raising

We begin by summarizing Barros and Vicente's (2011) argument (section 2.1), and then propose a PF condition that generalizes over right-node-raising-as-ellipsis and right-node-raising-as-multi-dominance (section 2.2).

2.1 The Duality of Right-Node Raising

Barros and Vicente (2011) identity four properties of right-node raising, two that are shared with regular forward ellipsis and two that are not. The first property familiar from forward ellipsis is the grammaticality of inflectional mismatches between the overt and the elided material, as illustrated in (2) (see also Bošković 2004; the examples below have been adapted slightly following consultation with native speakers). In (2a), the material that has undergone right-node raising (the *pivot*) consists of *waking up early*, which cannot appear following *fail to* when overt, but can act as an antecedent in a parallel case of forward ellipsis (see (2b)). In (2c), the elided material can be interpreted sloppily as *pass my math exam*, on a par with forward ellipsis (see (2d)).[3]

(2) a. I usually fail to, but Alice always succeeds in, waking up early.
    b. Alice always succeeds in waking up early, but I usually fail to ~~wake up early~~.
    c. I know that I didn't, but I'm sure that Alice will, pass her math exam.
    d. I'm sure that Alice will pass her math exam, but I know that I didn't ~~pass my math exam~~.

Right-node raising also resembles forward ellipsis in allowing vehicle change. The example in (3a) would violate principle C if the elided material were *fire Alice*. Apparently, a silent VP containing a pronoun (*fire her*) is recoverable in the presence of an overt VP containing a coreferent R-expression, a phenomenon well known from

[3] This does not exhaust the morphological mismatches permitted under right-node raising. Ha (2006) points to examples like *John has seen, but he has not bought, any of the latest Harry Potter books*, where the omitted material in the left conjunct must be ***some*** *of the latest Harry Potter books*. Examples of this type strengthen the case for the availability of the ellipsis derivation. However, we will ignore them here, as we have not managed to construct examples that test the compatibility of *any*/*some* mismatches with cumulative plural or internal readings of relational adjectives (see below).

regular VP ellipsis (see (3b); see Fiengo and May 1994 and subsequent literature for discussion).

(3) a. She$_1$ hopes that he won't, but I fear that the boss will, fire Alice$_1$.
b. I fear that the boss will fire Alice$_1$, although she$_1$ hopes that he won't ~~fire her~~$_1$.

Right-node raising is different from forward ellipsis in allowing cumulative plurals (see Postal 1998, Yatabe 2003, and Grosz 2015). The phenomenon is illustrated by the example in (4), which we borrow from Grosz (2015:16). Although the subject in each of the conjuncts in (4) is singular, many speakers allow the verb to appear in the plural, apparently reflecting the total number of people that have travelled to Cameroon.

(4) Mary is proud that John, and Sue is glad that Bill, have/has travelled to Cameroon.

In addition, right-node raising permits a so-called internal reading of relational adjectives like *same*, *similar* and *different*, even though that reading is unavailable in parallel structures involving regular ellipsis (see Jackendoff 1977 and Abels 2004). Consider an example like *Alice and Beatrix performed different songs*. On the external reading of *different*, the example means that Alice and Beatrix performed songs different from an unmentioned, contextually salient song. On the internal reading of *different*, the example means that Alice did not perform the song that Beatrix performed. Crucially, (5a) permits an internal reading of *different*, so that Beatrix performed a song that was different from the song that Alice composed. The example in (5b), which involves regular ellipsis, does not permit such an interpretation (that is, it cannot mean that Beatrix performed a song different from the song that Alice performed).

(5) a. Alice composed, and Beatrix performed, different$_{INT}$ songs.
b. *Alice performed a different$_{INT}$ song, and Beatrix did, too.

It is likely that internal readings of relational adjectives require the constituent containing *different* to take scope over the entire coordinate structure in examples like (5a). While there is general agreement that such unexpected wide scope is incompatible with regular ellipsis, there is debate as to what analysis of right-node

raising best explains it. Sabbagh (2007) argues that it favours a movement account in which the right-node-raised constituent undergoes across-the-board extraction to the edge of the coordinate structure. Bachrach and Katzir (2007, 2009) argue that the scopal properties of right-node raising can be explained in terms of multi-dominance, which is the analysis favoured over movement by other observations (see Abels 2004). We will follow the latter line of analysis here, as do Barros and Vicente, but we will return to the issue in section 2.3.

While the above is compelling, what makes Barros and Vicente's argument persuasive is their demonstration that the two properties associated with ellipsis (morphological mismatches and vehicle change) never occur together with the two properties associated with multi-dominance (cumulative agreement and internal readings of relational adjectives). This suggests that examples of right-node raising can indeed be derived in two discrete ways, rather than that they are derived by a unitary operation with mixed properties. There are four cases to consider: structures featuring a morphological mismatch and cumulative agreement, structures featuring a morphological mismatch and an internal reading of a relational adjective, structures featuring vehicle change and cumulative agreement, and structures featuring vehicle change and an internal reading of a relational adjective. The data below show that these structures are indeed all ungrammatical. (6a) does not permit a reading in which Alice is happy that Beatrix negotiated *her* salary with the manager; (6b) does not permit an interpretation in which there is one topic on which Alice has worked and a different topic on which Beatrix wants to work; (6c) does not permit coreference of *she* and *Claire*; and (6d) does not simultaneously permit coreference of *she* and *Claire* and an internal reading of *different*.

(6) a. *Morphological mismatch plus cumulative agreement:*
*Alice is happy that Beatrix, and Claire is proud that Daniel, have negotiated his salary with the manager. (sloppy reading)

b. *Morphological mismatch plus internal reading of* different:
*Alice already is, and Beatrix wants to, work on $\text{different}_{\text{INT}}$ topics.

c. *Vehicle change plus cumulative agreement:*
*She_1 fears that Alex, and I worry that Bob, have decided to nominate Claire_1.

d. *Vehicle Change plus internal reading of* different:
*She$_1$ intends to, and Bob expects to, present different$_{INT}$ topics to Alice$_1$'s supervisor.

To our mind, the case made by Barros and Vicente is hard to dismiss. However, it does raise an urgent question, namely why right-node raising originating from ellipsis and right-node raising originating from multi-dominance are both subject to the condition that the pivot is rightmost in the first conjunct. The existence of such an overarching condition gives the impression of a unitary process, in direct opposition to the data discussed above. This is the issue we turn to now.

2.2 The Unity of Right-Node Raising

We propose to explain the unitary behaviour of right-node-raising-as-ellipsis and right-node-raising-as-multi-dominance in terms of the PF interface. We start with the requirement that, all else being equal, each part of a syntactic structure must have its own phonological realization. This blocks free ellipsis, assuming that ellipsis involves non-spell-out of parts of the syntactic representation. It also blocks free multi-dominance, because under multi-dominance two or more parts of the syntactic representation are 'fused' (in a sense to be made precise below). They therefore cannot be realized separately. Right-node raising is licensed by a condition that permits, under specific circumstances, non-realization of parts of the syntactic representation. Under these circumstances, then, structure can be left unrealized at PF (ellipsis), or be fused in syntax (multi-domance).

In developing this idea, we need to make clear what we mean by 'parts of the syntactic representation'. The convention is to characterize constituents that way, but this convention is unhelpful in the present context. Suppose that we adopted the general mapping constraint in (7) (where a unique substring is defined in terms of position and content). This constraint would be violated by ellipsis, as under ellipsis a constituent remains unrealized, but it would not be violated by multi-dominance, as each constituent in a multi-dominance structure is in fact realized. In other words, (7) makes it impossible to generalize over the two processes.

(7) All else being equal, each syntactic constituent yields a unique substring.

We therefore define our mapping constraints in terms of branches of the syntactic tree, substituting (8) for (7). The two statements are equivalent, except in the case of

multi-dominance. Multi-dominance violates (8): when two or more branches point to a single constituent, they are realized by the same unique substring.

(8) All else being equal, each branch in a syntactic tree yields a unique substring.

The constraint in (8) defines the elsewhere case. There are of course numerous exceptions, each licensed under specific circumstances. Languages typically require that traces of movement remain unrealized. In addition, they may allow omission of pronouns, as well as various types of ellipsis. Right-node raising requires its own licensing condition, which we formulate in (9) (where 'twinned' is the term we use for the relation between elements associated under parallelism).

(9) Consider two domains of parallelism, D_α and D_β. Branch α in D_α need not yield a unique substring if (i) the material under it is twinned with the material under branch β in D_β and (ii) β yields a unique substring whose position satisfies the ordering constraints that D_α imposes on the material under α.

The condition in (9) has two parts, neither of which is new. The notion that deletion in coordinate structures requires parallelism is present in Williams 1978, Goodall 1987, and Moltmann 1992 (see also Hartmann 2000, who aims to derive it from information structural constraints on deletion). The restriction that right-node raising must preserve ordering statements generated in the conjunct that contains the gap (the 'dependent domain') goes back to work on the linearization of multi-dominance structures in Wilder 1999 and Bachrach and Katzir 2007, 2009.

Let us consider the effects of (9). In a simple example like (10a), the branch pointing to *opera* in the left conjunct need not yield a unique substring, because it is twinned under parallelism with the branch pointing to *opera* in the right conjunct, and because *opera* in the right conjunct satisfies the ordering restrictions associated with *opera* in the left conjunct (see (10b)).

(10) a. [John likes ~~opera~~], and [Mary dislikes opera]
b. Ordering in dependent domain: John > likes > opera

By contrast, (9) does not license omission of *opera* in the left conjunct. The parallelism requirement in (9i) is met, but the requirement in (9ii) is not. This is

because *opera* in the left conjunct cannot satisfy the ordering restrictions generated in the dependent domain (see (11b)), which in this case is the right conjunct. The gap in the dependent domain follows *Mary dislikes*, but *opera* in the left conjunct precedes this substring.

(11) a. *[John likes opera], and [Mary dislikes ~~opera~~].
b. Ordering in dependent domain: Mary > dislikes > opera

The constraint in (9) captures the fact that there may be material in the right conjunct that follows the right-node raised category, but no material in the left conjunct that follows the gap (see Whitman's (2009) discussion of right-node wrapping). In (12a) *Mary* in the right conjunct meets the requirements imposed on *Mary* in the left conjunct, but this is not true in (12b), as here *Mary* in the left conjunct precedes while *Mary* in the right conjunct follows *to come on stage*.

(12) a. [John introduced ~~Mary~~], and [Bill then invited Mary to come on stage].
b. Ordering in dependent domain: John > introduced > Mary
c. *[John invited ~~Mary~~ to come on stage], and [Bill then introduced Mary].
d. Ordering in dependent domain: John > invited > Mary > to > come > on > stage

The constraint also permits right-node raising of multiple constituents, as in (13).

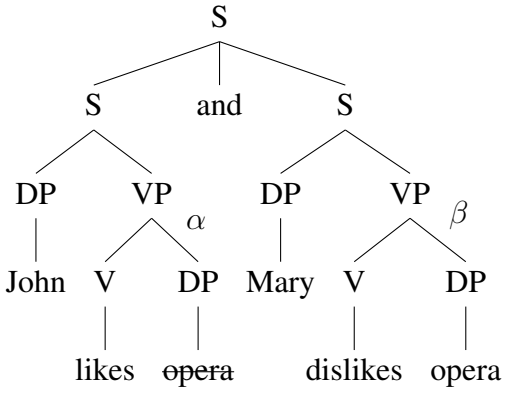
(13) a. [John gave ~~a book~~ ~~to Mary~~], but Bill only showed, a book to Mary
b. Ordering in dependent domain: John > gave > a > book > to > Mary

Parallism holds in all examples so far. However, the attempt at right-node raising in (14a) fails because of an absence of parallelism. The expressions to be twinned carry identical subscripts in (14a). As they appear in radically different structures, it is not possible to construe the two conjuncts as parallel domains. Note that (14a) does satisfy the linearization constraints imposed on *opera* in the dependent domain (see (14b)). It therefore meets (9ii)

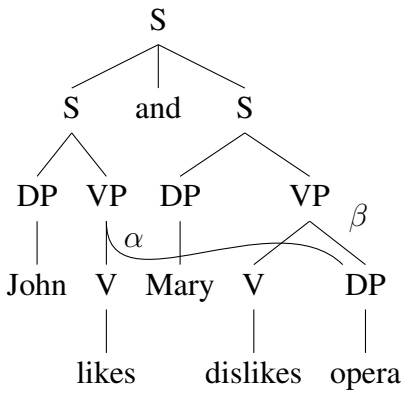
(14) a. *[John$_1$ likes$_2$ ~~opera~~$_3$], but [opera$_3$ is [the bane of Mary's$_1$ life]$_2$]
b. Ordering in dependent domain: John > likes > opera

Crucially, while the constraint in (9) regulates the distribution of right-node raising, it does not discriminate between right-node-raising-as-ellipsis and right-node-raising-as-multi-dominance. Consider the representations in (15).

(15)



Right-node-raising as ellipsis



Right-node raising as multi-dominance

The left and right conjuncts in both representations can be construed as parallel domains (as shown in (16)). Therefore, (9i) is satisfied:

(16) [John likes opera]
[Mary dislikes opera]

In both representations branch β yields a unique substring, *opera*, whose position satisfies the ordering constraints that the left conjunct imposes on the material under branch α (namely that it must follow *John likes*). Therefore, (9ii) is satisfied.

It is not an accidental property of this particular example that is admits two analyses. In fact, each of the grammatical examples in this section satisfies (9) whether analysed as involving ellipsis or multi-dominance, and each of the ungrammatical examples is ruled out by (9) on both analysis. This means that this condition is enough to reconcile Barros & Vicente's argument that right-node raising is not a unitary phenomenon with the fact that right-node-raising-as-ellipsis and right-node-raising-as-multi-dominance behave alike in important respects.

3. The Role of Coordination

Having developed a basic analysis of right-node raising in the previous section, we now turn the interaction between multi-dominance and coordination. First, we argue that right-node raising as multi-dominance requires coordination, so that in non-coordinate structures right-node raising must be ellipsis (section 3.1). Second, we show that quantifier raising out of a coordinate structure depends on multi-dominance

(section 3.2). This fact helps to explain how right-node-raising-as-multi-dominance licenses internal readings of relational adjectives.

3.1 Multi-dominance and Coordination

There are good reasons to think that it is only under coordination that right-node raising permits an analysis as multi-dominance, with the consequence that properties reliant on such an analysis disappear elsewhere. The fact that there are environments in which only right-node-raising-as-ellipsis is permitted strengthens the case for a dual analysis, simply because this restriction cannot be stated under a unitary account.

Our starting point is the observation in Hudson 1976 that right-node raising is not limited to coordinate structures. Thus, alongside (17a), we find examples like (17b).

(17) a. Father McKenzie married a man who likes, and a woman who dislikes, opera.
b. A man who likes, married a woman who dislikes, opera.

We give further data illustrating the same point in (18) and (19) below.

(18) a. I accidentally introduced an ardent opponent of, and a true believer in, the latest executive order.
b. I accidentally introduced an ardent opponent of, to a true believer in, the latest executive order.
c. An ardent opponent of, was introduced to a true believer in, the most recent executive order.

(19) a. In the end, has Mary talked to, and has John met, the chair of the planning committee?
b. In the end, Mary talked to, shortly after John met, the chair of the planning committee.

The grammaticality of examples like (17b) is hardly surprising, since both (9i) and (9ii) are met. The condition in (9i) is satisfied because the subject and the object can be construed as domains of parallelism (see (20a)). The condition in (9ii) is satisfied because *opera* in the object meets the ordering restrictions imposed on its counterpart in the dependent domain (here, the subject; see (20b)).

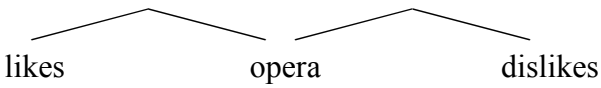
(20) a. [A man$_1$ who$_2$ likes$_3$ ~~opera~~$_4$] married [a woman$_1$ who$_2$ dislikes$_3$ opera$_4$]
b. a > man > who > likes > opera

Although the existence of examples like (17b) is widely acknowledged, their properties are not widely discussed. We believe that right-node raising in non-coordinate structures must involve ellipsis. The reason for this lies in an interpretational procedure we propose for multi-dominance structures – a procedure that relies on coordination for semantic convergence. Our proposal is based on two assumptions. The first is that the semantics builds up meaning incrementally, by which we mean that semantic commitments once made cannot be retracted. Our second assumption is that no syntactic constituent can be mapped onto two semantic workspaces.

To explain what this means, we should first explain the notion of semantic workspaces. In general, the interpretation of structures created by the merger of two complex categories requires the creation of independent partial semantic representations, each of which we might call a workspace. Thus, interpretation of [[*the man in the hat*] [*wants a pizza margherita*] requires a workspace for the subject and a workspace for the predicate. What our second assumption amounts to is that a single syntactic constituent cannot have semantic counterparts in multiple semantic workspaces.

With this in mind, consider the partial multi-dominance structure in (21a) (where *opera* appears between the two selecting verbs for reasons of transparency). It will be clear that the semantics assigned to this structure must include the predicates λ*x* (x likes opera) and λ*y*(y dislikes opera). However, as the two trees in (21a) share the constituent *opera*, they cannot constitute separate semantic workspaces. They must be part of a single semantic representation. The only semantic connection possible is one of coordination, as the structure in (21a) is fully symmetrical – there is no selectional relation between the two predicates). Consequently, (21a) must be interpreted as in (21b) (or the equivalent (21c)).

(21) a.



b. OPERA λ*z* [[λ*x* *x* LIKES *z*] AND/OR [λ*y* *y* DISLIKES *z*]]

c. [λ*x*.x LIKES OPERA] AND/OR [λ*y*.y DISLIKES OPERA]

Subsequent interpretive steps lead to further development of the semantics of the conjuncts in (21b). Thus, the semantic representation of (17a) just under the point at which the multi-dominance loop is closed is as in (22).

(22) [A MAN WHO LIKES OPERA] AND/OR [A WOMAN WHO DISLIKES OPERA]

Closure of the loop under coordination relies on a relatively simple procedure. All that is required is that the syntactic coordinator at the top of the loop is associated with the semantic coordinator introduced at the start of the derivation. Or put more precisely, the syntactic coordinator is mapped onto a semantic coordinator that is in turn identified with the semantic coordinator introduced in (21b). Notice that if the loop is closed in this way, no information committed to at an earlier stage of the interpretive procedure is withdrawn later.

In the absence of syntactic coordination, no multi-dominance loops can be created. Consider a multi-dominance analysis of (17b). Here, the two domains of parallelism function as subject and object. Therefore, the initial representation in (22) would have to develop into the one in (23). This, however, requires that the coordinator in (22) is overwritten, and overwriting of information is non-incremental.

(23) [A MAN WHO LIKES OPERA] MARRIED [A WOMAN WHO DISLIKES OPERA]

Our conclusion, then, is that multi-dominance loops can only be created under coordination.

This makes two predictions. First, if internal readings of relational adjectives are licensed by right-node-raising-as-multi-dominance, they should not be available in non-coordinate structures. This is correct. The examples in (24a), (25a) and (26a) permit internal readings of the relational adjective they contain, but the examples in (24b), (25b,c) and (26b) do not.

(24) a. Father McKenzie married a man who composed, and a woman who recorded, the very same$_{INT}$ song.

b. *A man who composed, married a woman who recorded, the very same$_{INT}$ song.

c. *A woman who recorded, was married to a man who composed, the very same$_{INT}$ song.

(25) a. I accidentally introduced an ardent opponent of, and a true believer in, the same$_{INT}$ executive order.
b. *I accidentally introduced an ardent opponent of, to a true believer in, the same$_{INT}$ executive order.
c. *An ardent opponent of, was introduced to a true believer in, the same$_{INT}$ executive order.

(26) a. So, in the end, Mary has talked to, and John has met, different$_{INT}$ members of the planning committee.
b. *So, in the end, Mary has talked to, shortly after John met, different$_{INT}$ members of the planning committee.

Second, if cumulative agreement is licensed by right-node-raising-as-multi-dominance, regular agreement should be the only option in non-coordinate structures. This prediction is correct as well. Cumulative agreement is possible in (27a) and (28a), but blocked in (27b) and (28b).

(27) a. Standing next to each other were a man sad that John, and a woman happy that Claire, has/have left for Germany.
b. A man sad that John, was standing next to a woman happy that Claire, has/*have left for Germany.

(28) a. I am aware of the fact that John, and the fact that Mary, has/have left for Germany
b. The fact that John, explains the fact that Claire, has/*have left for Germany.

3.2 Multi-Dominance and Scope

There is a second interaction between multi-dominance and coordination: pivots in right-node-raising configurations are unique in allowing quantifier raising out of the coordinate structure that contains them. Our aim in this section is to explain why this should be so.

Sabbagh 2007 observes that the universal quantifier in examples like (29a) can take scope over the coordination (see also Bachrach and Katzir 2007, 2009). Thus, the example allows a reading in which for every book on this shelf it is true that either a professor stole it or a student borrowed it. Such readings are not available when all conjuncts are fully realized (see (29b)) or when ellipsis takes place (see (29c)). We

must conclude, then, that coordinate structures block scope extension (an observation already made in Bošković and Franks 2000). However, scope extension of the pivot in a multi-dominance structure is an exception to this rule.

(29) a. A professor stole, or a student borrowed, every book on this shelf.
'For every book on this shelf, either a professor stole it or a student borrowed it.' ($\forall > \vee > \exists$)

b. A professor stole every book on this shelf, or a student did. (*$\forall > \vee > \exists$)

c. A professor stole every book on this shelf, or a student borrowed every book on this shelf. (*$\forall > \vee > \exists$)

There is some disagreement over the exact nature of the problem. Sabbagh (2007) and Bachrach and Katzir (2007, 2009) argue that it is a general property of right-node raising that the pivot can take exceptionally wide scope. In their assessment of the data, the issue is not limited to coordination: other constraints that normally govern scope extension also do not apply. Careful empirical work by Hirsch and Wagner (2015), however, suggests that this assessment may not be correct. Hirsch and Wagner show that while the pivot is indeed exceptional in its scopal interaction with coordinators, other island constraints tend to restrict the pivot's scope in the usual way.

As an example, consider the contrast in (30). Both examples come with a context that requires *only one bill* to scope over *and*. While the example in (30a) is acceptable in this context, the example in (30b) is not. The only way to account for these data, it seems, is to attribute the infelicity of the example in (30b) to the fact that *only one bill* is contained in a relative clause. Hirsch and Wagner show that relative clauses are indeed islands for quantifier raising of DPs modified by *only*.

(30) a. [Ted Kennedy proposed many pieces of legislation, but George Bush was willing to pass just one of them.]
Kennedy proposed, and Bush signed into law, only one bill.
'Only one bill is such that Kennedy proposed it and Bush signed it into law.' (*only* > *and*)

b. [Kennedy and Bush were usually on opposite sides of legislative efforts.]
?#Kennedy backed DEMOCRATS who discussed, and Bush supported REPUBLICANS who discussed, only one bill.
'Only one bill is such that Kennedy backed democrats who discussed it and Bush supported repiblicans who discussed it.' (*only* > *and*)

This pattern repeats itself for various other quantified expressions.

However, the data is not without complications. Sabbagh (2007) argued for the general island-insensitivity of the pivot on the basis of examples like (31a), which for at least a sizeable proportion of speakers allow the universal to scope over *or*, despite being contained in a relative clause.[4] The nature of the problem posed by this fact depends on whether relative clauses are barriers for quantifier raising of universals. This is received wisdom, and indeed corresponds to judgments reported by Sabbagh for examples like (31b). However, Hirsch and Wagner's informants do accept wide scope of the universal over the existential in (31b). In view of this, it may be that what is at stake are wide scope readings of universals, rather than the scope of pivots.

(31) [For my thesis, I need translations of example sentences from every Germanic language. I thought this was going to be complicated, because no single person speaks all Germanic languages, or even understands all of them. But I got a lucky break:]

a. %John knows someone who speaks, or he knows someone who understands, every Germanic language.
'For every Germanic language, John someone who speaks it or he knows someone who understands it.' ($\forall > \vee > \exists$)

b. % John knows someone who speaks every Germanic language.
'For every Germanic language, John knows someone who speaks it.' ($\forall > \exists$)

We assume that pivots are exceptional in being able to scope over coordinate structures, but like quantifiers in other positions in being bound by island constraints. However, we acknowledge (with Hirsch and Wagner) that the data are intricate and require more investigation (see also footnote 7).

[4] The example has been simplified and adapted to make it easier to distinguish the various relevant scopal relationships.

Why should multi-dominance allow the pivot to take scope over the coordination? Our hypothesis is that covert across-the-board movement from coordinate structures is not banned because coordinate structures are barriers for quantifier raising, but because movement chains may not branch:[5,]

(32) No movement chain can have multiple feet.

If this condition holds, across-the-board movement in (29b) and (29c) is ruled out. Such an operation would start with multiple copies of the universal quantifier, one in each of the conjuncts, and would consequently leave multiple traces bound by a single antecedent:

(33) a. [a professor stole every book on this shelf]
or [a student borrowed every book on this shelf].

b. *[[every book on this shelf]$_1$ [a professor stole t_1]
or [a student borrowed t_1]].

By contrast, a multi-dominance structure would start with a single constituent that raises to a position outside the multi-dominance loop. This movement creates a standard bijective chain, and is therefore compatible with (32):[6]

(34) a. [a professor bought
or [a student borrowed every book on this shelf].

b. [[every book on this shelf]$_1$ [a professor stole
or [a student borrowed t_1]].

[5] For reasons of presentation, the definition in (32) glosses over a technical complication. Heavy-XP shift can feed right-node raising, and in view of examples like (i) this is not only true of right-node-raising-as ellipsis, but also of right-node-raising-as-multi-dominance. Consequently, we must allow a single moved category to be associated with multiple traces.

(i) John intends to sell t_1 to Mary, and give t_1 to Sue, [the same antique sideboard]$_1$.

A simple solution is to restate (32) in terms of paths, as in (ii) below. This leaves the results discussed in the main text unaffected, but allows (i). In (i), the two paths that connect the pivot to its traces in (i) do not overlap, given that the two nodes that dominate the pivot each dominate a single trace.

(ii) a. A path linking a moved category α to a trace β consists of all nodes that dominate β up to the first node that dominates α.
b. No path linking a moved category α to a trace β may overlap with a path linking α to a trace γ (β≠γ), unless β c-commands γ.

Two further remarks. First, the *unless* clause in (iib) allows for intermediate traces. Second, the definition implies that configurations like in (i) cannot be used to effect across-the-board movement, as that would result in overlapping paths (see the main text for discussion).

[6] The analysis sketched here adopts the standard assumption that covert scope extension is movement. However, there are non-movement analyses that would work equally well, for instance the proposal in Neeleman and van de Koot 2012. On that proposal, too, multi-dominance is required for the pivot to take scope over the coordination.

As the crucial reading of examples like (29a) is derived by regular quantifier raising of the universal out of the coordinate structure, we expect it to be subject to the same locality constraints as other instances of this operation. This captures the generalization argued for by Hirsch and Wagner.

Our account does not predict that only the pivot can take scope over the coordination; in principle, such scope is also available for categories that are part of the pivot. After all, in a multi-dominance structure material contained within the pivot is represented only once, so that it can move to a position outside the coordination without violating the condition in (32). By contrast, quantificational categories represented in multiple conjuncts should be unable to take scope over the coordination, even if part of them functions as the pivot in a multi-dominance structure. Thus, we predict that the universal in (35a) can scope over *or*, unlike the universal in (35b).

(35) a. Mary managed to, or made progress in her attempt to, prove every theorem that she studied.
'For every theorem that Mary studied, she made progress in her attempt to prove that theorem or managed to prove it.' ($\forall > \vee$)

b. *Mary managed to prove every theorem, or disprove every theorem, that she studied.
'For every theorem that Mary studied, she managed to prove that theorem or to disprove it.' ($\forall > \vee$)

These judgments are correct, though subtle. One way to bring out the contrast more clearly is to make use of yes/no questions. A simple yes/no question containing a disjunction (such as *Would you like coffee or tea?*) resists an affirmative answer, as such answers are not informative. However, if a universal takes scope over *or*, an affirmative answer is felicitous. Thus, if (36) is interpreted as *For every theorem that Mary studied, did she manage to prove or disprove that theorem?*, an affirmative answer makes sense. However, if (36) is interpreted as *Did Mary manage to prove every theorem that she studied or to disprove every theorem that she studied?*, a positive answer is awkward. What is required is an answer identifying which alternative is correct.

(36) Q: Did Mary manage to prove, or manage to disprove, every theorem that she studied?
A: the former/yes

In view of this, the following data confirm that quantifiers fully contained in the pivot can scope over the conjunction, while quantifiers partly contained in the pivot cannot.

(37) a. Q: Did Mary manage to, or make progress in her attempt to, prove every theorem that she studied?
A: the former/yes
b. Q: Did Mary manage to prove every theorem, or disprove every theorem, that she studied?
A: the former/#yes

Notice that overt across-the-board movement, just like quantifier raising from coordinate structures, can only avoid violating the ban on branching movement chains through multi-dominance. Otherwise the extracted category would leave multiple traces. This is hardly a new suggestion; it goes back to Williams 1978 and has been developed in varying ways by Goodall 1987, Citko 2005, and De Vries 2009. We should point out, though, that while covert across-the-board movement must start from a multi-dominance structure licensed by the condition in (9), this is not true of overt across-the-board movement. Given that traces are not spelled out to begin with, the condition in (9) does not apply to them, which in turn explains why right-node raising is not required for overt across-the-board movement:

(38) a. did you [borrow / and [give] which book] [from John / to Mary]?
b. [which book]$_1$ did you [borrow / and [give] t_1] [from John / to Mary]?

The fact that the pivot can take scope over coordinate structures is important for an observation discussed earlier (see section 2.1). It is likely to be the mechanism by which internal readings of relational adjectives are licensed in right-node raising structures. Carlson 1987 argues that the availability of an internal reading of *same* requires distribution over events. For example, *John and Bill read the same book* permits an internal reading if John and Bill each read a book, so that there are two reading events, but not if there is a single reading event in which John and Bill

collaboratively read a book. Similarly, an internal reading is possible in *John read the same book twice*, but not in *John read the same book once*. It seems, then, that *same* must take scope over multiple events.

With this in mind, consider the example in (39). If *same* is to take scope over multiple events, it must take scope over the coordination. This is exactly the kind of unexpected wide scope that multi-dominance permits. It therefore follows that right-node-raising-as-multi-dominance, but not right-node-raising-as-ellipsis, can license internal readings of relational adjectives.

(39) Ann read, and Bill reviewed, the same$_{INT}$ book.

An extensive reworking and expansion of Carlson's insights can be found in Barker 2007. Barker shows that Carlson's generalization is too strong, and that *same* in fact requires multiple situations (where distinct events count as distinct situations, but not vice versa). This, however, does not affect the conclusion that scope over the coordination is instrumental for licensing internal readings of relational adjectives.

It now follows that if the pivot is contained in an island, internal readings of relational adjectives will not be licensed. Abels (2004) argues that this is correct. Of course, it matters what categories count as islands for the scope of relational adjectives. Abels shows that relational adjectives can scope quite high, but are bounded by *wh*-questions (see (40a)). In line with this, an internal reading of *different* is excluded in the parallel right-node-raising construction in (40b).

(40) a. [My friend Konrad is wondering when Bob Dylan wrote his song Mister Tambourine Man and my friend Friederike would like to know when Bob Dylan wrote his song The Times They Are a-Changin'.]
?*Konrad and Friederike are wondering when Bob Dylan wrote two quite different songs.

b. [My friend Konrad has written a song called Revolution #10 and my friend Friederike has recorded a song called Revolution #11. Despite bearing similar titles, the two songs are quite different from each other. I would like to know when Konrad wrote his Revolution #10 and you would like to find out when Friederike recorded Revolution #11. Revolution #10 is the only song Konrad ever wrote and Revolution #11 the only song Friederike ever recorded.]

?*I wonder when Konrad wrote, and you would like to know when Friederike recorded, two quite different songs.

There is a final prediction to check. Our analysis predicts that right-node raising in non-coordinate structures should not give rise to unexpected wide scope of the pivot. This is because such structures must involve ellipsis, and ellipsis does not allow the kind of semantic derivation required for unexpected wide scope (due to (32)). The data seem to be in line with expectations. The examples in (41a), (42a) and (43a) allow the universal quantifier to scope over the two existentials, but the examples in (41b), (42b,c) and (43b) do not.

(41) a. [Father Mckenzie has noticed that most marriages among his flock are between people who speak the same foreign language. In fact, …]

Father McKenzie married a man who speaks, and a woman who is proficient in, every single European language.

'For every single European language, Father McKenzie married a man who speaks that language to a woman who is proficient in it.' ($\forall > \exists / \exists$)

b. *A man who speaks, married a woman who is proficient in, every single European language.

'For every single European language, a man who speaks that language married a woman who is proficient in it. ($\forall > \exists / \exists$)

c. *A woman who is proficient in, was married to a man who speaks, every single European language. ($\forall > \exists / \exists$)

'For every single European language, a woman who is proficient in that language was married to a man who speaks it.

(42) [Bill attends political meetings at which things can get out of hand. He has been very unlucky recently. At every meeting where one of Trump's executive orders was discussed he ended up causing a fight.]

a. Bill accidentally introduced an ardent opponent of, and a true believer in, every recent executive order. (∀>∃/∃)

'For every recent executive order, Bill accidentally proposed an ardent opponent of that order and a true believer in it.'

b. *Bill accidentally introduced an ardent opponent of, to a true believer in, every recent executive order.

'For every recent executive order, Bill accidentally proposed an ardent opponent of that order to a true believer in it.' (∀>∃/∃)

c. *An ardent opponent of, was accidentally introduced to a true believer in, every recent executive order.

'For every recent executive order, an ardent opponent of that order was accidentally introduced to a true believer in it.' (∀>∃/∃)

(43) [Mary and John agreed a double-pronged approach to their lobbying of the planning committee. They identified three members that Mary would talk to and that John would meet. They each duly contacted three members, but got the names wrong.]

a. In the end, Mary has talked to, and has John met, only one member of the planning committee.

'In the end, only one member of the planning committee was such that Mary has talked to that member and John has met them.' (*only* > *and*)

b. *In the end, Mary has talked to, shortly after John met, only one member of the planning committee.

'In the end, only one member of the planning committee was such that Mary has talked to that member after John met them.' (*only* > *and*)

Let us take stock. We have reached the following main conclusions in sections 1-3. (i) In coordinate structures, right-node raising is ambiguous between ellipsis and multi-dominance. (ii) Elsewhere, it involves ellipsis (as multi-dominance loops can only be created under coordination). (iii) The parallel behaviour of right-node-raising-as-ellipsis and right-node-raising-as-multi-dominance follows from a PF mapping rule

that regulates the phonological realization of domains of parallelism. (iv) A ban on branching movement chains explains why multi-dominance structures uniquely allow the pivot (or material in it) to scope over a coordinator.[7] (v) This in turn explains why right-node-raising-as-multi-dominance, but not right-node-raising-as-ellipsis, can license internal readings of relational adjectives.

4. The Cumulative Plural

We next consider agreement in right-node raising. Agreement under right-node-raising-as-ellipsis is straightforward. The raised predicate must agree with the subject local to it. Of course, elided predicates must also agree with the local subject, but given that morphological mismatches are allowed under ellipsis, this may not be apparent. The predicted pattern, then, is that feature mismatches may occur, as long as the raised predicate agrees with the subject closest to it. This is in line with the data:

(44) a. John said that I, and I said that John, is/*am a fool.
b. I said that John, and John said that I, am/*is a fool.
c. I said that you, and you said that I, am/*are a fool.
d. You said that I, and I said that you, are/*am a fool.

The more problematic, and therefore more interesting case involves cumulative agreement. Why should right-node raising allow plural marking, even in examples like (45), where the subject in each conjunct is singular? It is important to have a satisfactory answer to this question, as we used cumulative agreement as a test for deciding whether a given instance of right-node raising involves multi-dominance or ellipsis (following Barros and Vicente 2011).

(45) Mary is proud that John, and Sue is glad that Bill, have travelled to Cameroon.

In this section, we first argue that cumulative agreement is an instance of semantic agreement (section 4.1), and then show that the rule responsible for it also accounts

[7] If it turns out that right-node-raising is in fact exceptional in that the pivot is not subject to island constraints, a fallback analysis can be based on the principle of scope transitivity, which states that if α takes scope over β, and β takes scope over γ, then α takes scope over γ (see Neeleman and Van de Koot 2012). Recall that multi-dominance triggers the early introduction of semantic coordination, before any syntactic islands are detectable. Therefore, the pivot can scope over the coordinator early on in the semantic derivation. Subsequent development of the semantic representation extends the scope of the coordinator, and therefore by implication the scope of the pivot, thus bypassing any island constraints. This account requires quite specific assumption about the mapping from syntax to semantics which are avoided under the account in the main text.

for agreement with collective noun phrases in British English (section 4.2). Finally, we consider cumulative plurals in the nominal domain, which will turn out to confirm various aspects of our analysis (section 4.3).

4.1 Cumulative Agreement as Semantic Agreement

Grosz (2015) proposes the following analysis of cumulative agreement under right-node raising (for reasons of space we omit various details). (i) A multi-dominated predicate agrees with multiple subjects. (ii) Plural DPs have multiple indices; singular DPs have a single index. (iii) Under agreement, all the subject's indices are copied into an agreement slot. (iv) An agreement slot is an unordered set of indices whose arity is reflected by morphological number.

Thus, in (45) the indices of *John* and *Bill* are copied into the predicate's agreement slot. As these indices are distinct, the arity of the agreement slot is larger than one, and therefore the auxiliary assumes its plural form:

(46) Mary is proud that John$_{\{j\}}$, and Sue is glad that Bill$_{\{b\}}$, have$_{\{j,b\}}$ travelled to Cameroon.

This analysis predicts correctly that if in a comparable structure the two subjects bear the same index, agreement will be singular. Thus, in (47) the index of *John* is copied twice. These indices are not distinct, so the arity of the agreement slot is one ($\{j, j\} = \{j\}$). Consequently, insertion of a plural auxiliary is not warranted.

(47) Mary is PROUD that John$_{\{j\}}$, and Sue is GLAD that John$_{\{j\}}$, has$_{\{j\}}$/*have$_{\{j\}}$ travelled to Cameroon.

While ingenious in its syntacticization of cumulative agreement, this analysis falls short in one crucial respect. To see this, consider (48). Here, the context makes clear that a single person has travelled to Cameroon, while the example sentence describes a disagreement over the question of who this person might be. As it turns out, under these circumstances the auxiliary cannot carry plural morphology. This does not follow from the procedure described above. *Bill* and *Carla* have different indices, and therefore the arity of the auxiliary's agreement slot will be larger than one, which should trigger plural marking.

(48) [Someone has travelled to Cameroon, but we do not know who.]
John said that BILL, but Mary said that CARLA, has/*have travelled to Cameroon.

The effect is not limited to instances of right-node raising with *but* as coordinator. There is a clear contrast between (49a), where the assumption is that a single person has stolen a unique backdoor key, and (49b), where the assumption is that multiple persons have stolen copies of the backdoor key. Only the second scenario allows plural marking of the predicate, even though the structures are syntactically identical and both have *and* as a coordinator. (Of course, the verb can also be singular in the second scenario, as in (49c). This is presumably the output of the alternative analysis of right-node raising as ellipsis.)

(49) a. [Someone has stolen the backdoor key, but we do not know who.]
John said that Bill, and Bill said that John, has/*have stolen the backdoor key.

b. [Several people have stolen backdoor keys, but we do not know who.]
Mary said that Bill, and Carla said that John, have stolen a backdoor key.

c. [Several people have stolen backdoor keys, but we do not know who.]
Mary said that Bill, and Carla said that John, has stolen a backdoor key.

In conclusion, cumulative agreement is sensitive to whether or not the predicate is supposed to hold of a plural individual, and this does not follow from the notion of index copying as developed in Grosz 2014.

The alternative analysis we propose takes as its starting point the hypothesis that agreement is feature identification. What this means is that agreement allows a feature that appears in a location where it cannot be interpreted (say, an auxiliary) to be equated with a feature that appears in a location where interpretation is possible (say, a DP subject). In other words, the output of the operation is a single feature that has multiple locations, one of which feeds semantics. This idea can be found in theories such as HPSG and LFG (see for instance Gazdar et al. 1985, Shieber 1986, Barlow 1992 and Pollard and Sag 1994). In Minimalism, a similar line is adopted in Brody 1997.

One implication of this hypothesis is that agreement is not possible under multi-dominance. This is obvious when there is a clash in features, as in (50). Agreement cannot identify the number specification of the auxiliary with both the plural specification of *the Johnsons* and the singular specification of *Bill*.

(50) Mary is proud that the Johnsons, and Sue is glad that Bill, has/have travelled to Cameroon.

However, even if the two subjects are both plural or both singular, agreement is impossible. Consider (45). If the number feature of *John* is identical to the number feature of the auxiliary, and the same is true of the number feature of *Bill*, then, by transitivity, the number features of *John* and *Bill* are identical. This leads to an inconsistency. In general, features are interpreted no more than once. However, number in DPs must be interpreted (barring some minor exceptions), which in the case at hand would lead to a feature being interpreted twice. Therefore, agreement under multi-dominance is not, in fact, possible.

This suggests that cumulative agreement is not so much a consequence of multiple agreement, but rather a consequence of the impossibility of agreement. We propose that, in the absence of agreement, plural number marking triggers the rule in (51) (where VP+ is meant to stand for the minimal verbal category that hosts plural number).

(51) If VP+ is marked as plural, then ⟦VP+⟧ applies to a plural individual.

This rule captures the data discussed above. In (45), plural marking on the auxiliary implies that the predicate *have travelled to Cameroon* applies to a plural individual. In the multi-dominance structure, this predicate takes two subjects, which yields the propositions that John has travelled to Cameroon and that Bill has travelled to Cameroon. If both are taken to be true, as is the case in (45), then it is also true that John and Bill have travelled to Cameroon. This satisfies the requirement in (51).

In (48), plural marking on the auxiliary again triggers the requirement that the predicate *have travelled to Cameroon* must apply to a plural individual. However, in this case the two propositions generated under multi-dominance are not distinct, and so it is only possible to conclude that a singular individual, *John*, has travelled to Cameroon. Thus, (48) violates (51).

In (48), two distinct propositions are generated, namely ‘Bill has travelled to Cameroon’ and ‘Carla has travelled to Cameroon’. However, in the context given only one of these is assumed to be true, and therefore it is not possible to conclude that Bill and Carla have travelled to Cameroon. Plural marking on the auxiliary is consequently not warranted.

The same logic applies to (49a), where plural marking gives rise to the requirement that *have stolen the backdoor key* applies to the plural individual consisting of Bill and John. But as the context makes clear, the issue at hand is which of them is the thief, and so (51) is violated. The example in (49b) triggers a similar requirement, namely that *have stolen a backdoor key* applies to a plural individual consisting of Bill and John. However, here the context makes clear that multiple people are assumed to have stolen backdoor keys, and therefore (51) is satisfied.

The rule in (51) is not intended to replace syntactic agreement. Rather, it is intended to be available where syntactic agreement is not. This arrangement is familiar from binding theory. Syntactic binding is often claimed to block variable binding and coreference, which are relations taken to be established outside syntax proper; see Reinhart 1983 and Reuland 2011, among others. There are three arguments supporting the claim that syntactic agreement must indeed take priority over the rule in (51). First, pluralia tantum subjects trigger plural agreement, but are not (necessarily) compatible with the requirement that the predicate applies to a plural individual. We illustrate this using the Dutch example in (52a). (Although we will not demonstrate this here, Dutch has cumulative agreement under right-node raising.) Second, collective noun subjects in many languages and in many varieties of English trigger singular agreement, even though they would arguably meet the requirement that the predicate applies to a plural individual. We give Dutch (52b) as an example. Finally, categories that are not predicates can carry number information. An English example is given in (52c). Notice that the constituent marked plural (*are three men in the garden*) is not a predicate, because it does not contain an unsaturated argument variable. Consequently, the rule in (51), which is defined for structures in which ⟦VP+⟧ combines with a subject, is inapplicable.

(52) a. Mijn hersens doen/*doet pijn wanneer ik deze formule zie.
my brain.PL do/does pain when I this formula see
‘My brain hurts when I see this formula.’

b. De regering heeft/*hebben na lang overleg de belastingen verlaagd.
the government has/have after long discussion the taxes lowered
'The government has, after a long discussion, lowered taxes.'

c. There are three men in the garden.

The primacy of agreement over the rule in (51) has the consequence that cumulative agreement will not be available under right-node-raising-as-ellipsis. After all, in ellipsis structures each predicate can, and therefore must, agree with its local subject. This sufficiently underpins the use of cumulative agreement as a test for right-node-raising-as-multi-dominance.

Finally, the above account explains why even in contexts where cumulative agreement is licensed we find what Grosz (2015) calls an anticollectivity effect: two singular subjects cannot act as a virtual plurality for collective predicates like intransitive *meet*. We take the ungrammaticality of (53a) to be trivial, but it is not immediately clear why (53b) should be ruled out, given that here the two singular subjects act as a virtual plurality for the purposes of number marking.

(53) a. *Mary is happy that John, and Sue is delighted that Bill, has finally met.

b. *Mary is happy that John, and Sue is delighted that Bill, have finally met.

Our solution to this puzzle is as follows. The rule in (51) is satisfied in multi-dominance structures with singular subjects only if it is valid to conclude that ⟦VP+⟧ applies to a plural individual $a+b$, given that it applies to the singular individuals a and b. But notice that this implies that the raised predicate must be distributive. That is, ⟦VP+⟧($a+b$) must be equivalent to ⟦VP+⟧(a) ∧ ⟦VP+⟧(b). Such equivalence requires that ⟦VP+⟧, when applied to a singular individual, is defined in the first place. This is not true of non-distributive predicates like intransitive *meet*, and consequently predicates of this type cannot undergo right-node-raising-as-multi-dominance.

4.2 Agreement with Collective Noun Phrases in British English

We now take a closer look at agreement with British English collective noun phrases, because several well-known facts about this phenomenon provide independent evidence for one aspect of the rule in (51), namely its dependence on ⟦VP+⟧ being a predicate. Our starting point is the observation that DPs headed by a singular collective noun permit plural agreement in British English:

(54) a. [My nephews are like two peas in a pod.] The pair go everywhere together.
b. [My nephews are like two peas in a pod.] The pair goes everywhere together.

Collective noun phrases can be construed as referring to a single complex entity or to a collection of individuals. This dual character is of course not specific to British English; only the agreement pattern is. It has been noted, though, that the choice of verbal ending correlates with the construal of the subject (see, for instance, Quirk et al. 1985:758).

The question, of course, is what is special about British English, as opposed to varieties of English that do not permit plural agreement with singular collective noun phrases. Some authors have argued that collective noun phrases have an atypical featural make-up, and that there is a parameter in the agreement system that is sensitive to this (see Sauerland and Elbourne 2002 and Smith 2015).

We take a different tack and assume that the agreement system of British English is no different from the agreement system present in other varieties. Rather, what is special about British English – we hypothesize – is that it allows collective noun phrases to remain unspecified for number.[8] (Number is omitted only optionally, as is evident from the fact that collective noun phrases can be pluralized.)

One reason for proposing that the locus of variation is the noun phrase rather than the agreement system is the fact that there is lexical and individual variation in the set of collective noun phrases that allow semantic agreement. Speakers of British English are the most permissive, but even so many do not allow plural agreement across the board. Conversely, speakers of American English are the least permissive, but many still allow plural agreement with some collective noun phrases. As an illustration of this variation, the table below indicates how many out of a group of eight native speakers allow plural agreement with fourteen representative collective nouns. The speakers have all lived in London for some time, but grew up in a range of English-speaking nations.

[8] We assume that elements unspecified for number lack number information. Alternatively, one could assume that there are simultaneously plural and singular, which presumably would also block agreement.

(55)

	pair	family	gaggle	couple	committee	pride	bank	colony	school	audience	set	team	government	deck
1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	*	*
2	✓	✓	?	✓	✓	✓	✓	✓	✓	✓	?	✓	*	*
3	✓	✓	✓	✓	✓	✓	✓	✓	✓	*	*	*	*	*
8	✓	✓	*	✓	✓	*	✓	*	*	✓	✓	✓	*	*
4	✓	*	✓	*	*	✓	*	?	*	*	✓	*	?	*
5	?	?	✓	?	?	*	*	*	*	*	*	?	*	*
6	?	?	?	?	*	?	*	*	?	?	*	*	*	*
7	✓	✓	?	*	?	*	*	*	*	*	*	*	*	*

When collective noun phrases are left unspecified for number, two things happen. First, the noun phrase will be morphologically singular, as that is the default in the number system. Indeed, Corbett (1979) and Elbourne (1999) note that demonstratives must appear in their singular form, even if the DP is construed as referring to a plural individual:

(56) This/*these set are all odd.

Second, if the collective noun phrase is a subject, number agreement with the verb is impossible. This means that plural marking on the predicate must be licensed through the rule in (51). Of course, in this case VP has but a single subject (as opposed to VPs that have undergone right-node-raising-as-multi-dominance), and therefore the restriction that ⟦VP⟧ must apply to a plural individual simply entails that subject must denote such an individual. Thus, plural marking in an example like (54b) signals that *the pair* must be construed as referring to a collection of individuals, which is indeed the landmark interpretive effect of plural agreement with collective noun phrases.

Notice that the use of a singular predicate is predicted to have no interpretive effects. Admittedly, if the collective noun phrase is left unspecified for number and the predicate is singular, this would trigger an interpretation of the subject as referring to a single complex entity (as an elsewhere effect in the absence of application of (51)). However, there is an alternative analysis in which the collective noun phrase is specified as singular and the form of the predicate is determined by regular syntactic agreement. That alternative analysis has no implications for the construal of the subject as a single complex entity or a collection of individuals. What we expect to

find, then, is disambiguation when the predicate is plural, but ambiguity when the predicate is singular.

This is exactly the pattern described by Huddleston and Pullum (2002) and Smith (2015). Huddleston and Pullum note that in examples like (57) the use of a singular possessive pronoun is compatible with either plural or singular marking on the predicate. However, use of a singular possessive pronoun requires singular marking on the predicate:

(57) a. The committee hasn't yet made up its mind.
b. The committee haven't yet made up their mind.
c. The committee hasn't yet made up their mind.
d. *The committee haven't yet made up its mind.

Smith notes that the same pattern can be observed with reflexives/reciprocals:

(58) a. The government has offered itself up for criticism (with this policy).
b. The government have offered themselves/each other up for criticism.
c. The government has offered ?themselves/?each other up for criticism.
d. *The government have offered itself up for criticism.

These data fall into place if the choice of anaphoric element corresponds with the construal of the collective noun phrase that binds it. The presence of plural verbal inflection triggers an interpretation of the subject as a plural individual, which in turn rules out anaphoric dependencies with a singular pronoun or anaphor.

If apparent plural agreement with singular collective noun phrases is indeed the result of the suspension of agreement in favour of the rule in (51), then the plural-marked category must be a predicate. This captures several observations about the contexts in which plural agreement is licensed. To begin with, Elbourne (1999) notices that plural agreement is ungrammatical in expletive constructions like (59a), while it acceptable when the collective noun phrase occupies the subject position, as in (59b). This follows, because *are a committee deciding the budget for next year* in (59a) is not a predicate, and therefore plural marking cannot be licensed through (51). It can also not be licensed through regular syntactic agreement, as the subject *a committee* is not plural.

(59) a. There is/*are a committee deciding the budget for next year.

b. A committee is/are deciding the budget for next year.

Elbourne also notices that an indefinite collective noun phrase can only reconstruct to a lower subject position if the predicate is singular:

(60) a. [A northern team]$_1$ is likely t_1 to be in the final. $\exists$ > *likely* / *likely* > $\exists$

b. [A northern team]$_1$ are likely t_1 to be in the final. $\exists$ > *likely* / **likely* > $\exists$

Reconstruction in (60) creates category *is*/*are likely a northern team to be in the final*. This category does not contain an unsaturated argument variable and therefore does not qualify as a predicate. The consequence is that the rule in (51) is not applicable, and so plural marking is unwarranted.

Finally, Den Dikken (2001) notices that plural agreement affects the interpretation of specificational copula constructions. The example in (61a) permits two readings, which correspond to a construal of *the best committee* as the subject or the predicate. These readings are described in (62). On the predicate reading the referents of *theirs* are necessarily part of the committee, while on the subject reading, they are the owners of the committee, but not necessarily a part of it (perhaps they head the administrative unit within which the committee operates).

(61) a. The best committee is theirs. ✓subject reading / ✓predicate reading

b. The best committee are theirs. ✓subject reading / *predicate reading

(62) a. Subject reading: The best committee belongs to them.

b. Predicate reading: The committee that they belong to is the best committee.

Crucially, in the presence of a plural copula the predicate reading disappears. Thus, in (61a) *the best committee* must be interpreted as subject, rather than predicate. This restriction follows if plural marking in the presence of a singular collective noun phrase is indeed licensed through (51). For (51) to be applicable, the plural-marked constituent must be a predicate. But as a matter of logic, a predicate cannot contain the subject it is predicated of, and therefore the predicate reading is unavailable.

Before we move to cumulative number in nominal right-node raising, we summarize the main conclusions reached so far in this section. (i) Cumulative

agreement is semantic agreement. (ii) It is dependent on predication. (iii) It is licensed where regular agreement is unavailable.

4.3. The Nominal Cumulative Plural

Our final effort in strengthening the case for a dual analysis of right-node raising is based on examples of like (63a) (which may usefully be compared to cases of forward nominal ellipsis, such as (63b)). As we will show, the behaviour of such examples provides further empirical support for various aspects of our account, including our view of cumulative plurals.

(63) a. The green and the blue bottles are standing on the table.
b. The green bottle and the blue are standing on the table.

That examples like (63a) must be analysed as right-node raising can be demonstrated in two ways. First, as (64a) shows, ungrammaticality results if the gap in the first conjunct is followed by overt material (here a PP modifier). Forward nominal ellipsis does not behave in the same way; (64b), for instance, is perfectly grammatical.

(64) a. *The green from Murano and the blue bottles from Bohemia are standing on the table.
b. The green bottle from Murano and the blue from Bohemia are standing on the table.

Second, while right-node raising is more restricted than regular ellipsis in terms of the position of the gap, it is less restricted in terms of the categories it can apply to (see Neijt's (1979) discussion of backward conjunction reduction). Therefore, the fact that backward nominal ellipsis can affect the right-hand part of a compound, while forward nominal ellipsis cannot, suggests that the former should be analysed as right-node raising:

(65) a. The coffee and the tea cups are standing on the table.
b. *The coffee cup and the tea are standing on the table.

Interestingly, nominal right-node raising can give rise to cumulative plurals. Thus, the example (63a) permits the four readings in (66a-d). The reading in which the coordinate subject refers to a set containing multiple green and multiple blue bottles is unremarkable. A little more curious is that it can also refer to a set of bottles that has a single green or indeed a single blue member. Most surprising, however, is the reading

in which the subject in (63a) refers to a pair of bottles, one green and one blue. On this 'dual reading', the plural marker must be cumulative, as only through the addition of green and blue bottles can a plurality be formed.

(66) a. The green bottles and the blue bottles are standing on the table.
b. The green bottle and the blue bottles are standing on the table.
c. The green bottles and the blue bottle are standing on the table.
d. The green bottle and the blue bottle are standing on the table.

One might expect the dual reading to be expressed as in (67), but in fact this example is rejected by many speakers.[9]

(67) %The green and the blue bottle are standing on the table.

The rule that governs the distribution of the cumulative plural in nominal right-node raising can be formulated as follows:[10]

(68) If NP is marked as plural, then λx [[[NP]](x) $\wedge$ S(x)] applies to a plural individual.

In this rule, NP is intended to refer to the right-node raised constituent, while 'λx S(x)' is a predicate derived by replacing the plural-marked DP by a lambda-bound variable. Thus, use of the plural in (63a) requires that λx [bottle(x) $\wedge$ [x are standing on the table]] applies to a plural individual. Similarly, use of the plural in *John saw the green and the blue bottles* requires that λx [bottle(x) $\wedge$ [John saw x]] applies to a plural individual.

The rule in (68) predicts that plural marking must be omitted when the coordinate subject refers to a single individual. Thus, if the biggest bottle and the greenest bottle are distinct, a dual reading of the example in (69a) requires plural marking. However,

[9] In view of the optionality of cumulative agreement in verbal contexts, it is striking that many speakers strongly prefer a plural ending in examples like (63a) (on a dual reading). Below we will give examples where the dual reading requires omission of that the plural ending is absent, which suggests that we are dealing with a preference, rather than an absolute requirement. If the cumulative plural is associated with multi-dominance (as we will argue), that preference may have its origin in the prosody of right-node-raising-as-ellipsis and right-node-raising-as-multi-dominance (see Valmata 2013 for related discussion). Our impression is that the former typically requires prosodic breaks preceding the second conjunct and the pivot (so, both morphological mismatches and vehicle change favor this prosodic pattern). These breaks may be suboptimal within DP, but acceptable in larger structures.

[10] As mentioned, Dutch has cumulative agreement in verbal right-node raising, but not in the nominal contexts discussed here. This is an argument against attempting to unify the rule in (68) and that in (51).

if there is a single bottle that is both the biggest bottle and the greenest bottle, plural marking is impossible, as (69b) shows.

(69) a. The biggest and the greenest bottle*(s) are standing on the table.
b. The biggest and the greenest bottle(*s) is standing on the table.

The rule in (68) also captures the fact that the cumulative plural does not appear in disjunctions. Consider a situation in which there is one green bottle and one blue bottle. Even though multiple bottles are present, the sentence in (70) does not imply that multiple bottles are standing on the table. Therefore, plural marking is not licensed.

(70) The green or the blue bottle(*s) is standing on the table.

We assume that the nominative cumulative plural, like its verbal counterpart, is licensed only when syntactic agreement is impossible (that is, in multi-dominance configurations). This appears to be correct. To begin with, cumulative plural marking is ungrammatical in the absence of conjunction reduction, or when it is the rightmost noun that is elided:

(71) The green bottle and the blue bottles are standing on the table. *(66d)

(72) a. The green bottle and the blue are standing on the table.
*(66a), ??(66b), *(66c), (66d)
b. The green bottles and the blue are standing on the table.
(66a), *(66b), ??(66c), *(66d)

Recall that we have argued that right-node-raising-as-multi-dominance requires coordination. Consequently, cases of backward nominal ellipsis that do not involve coordination cannot be generated through multi-dominance, which in turn means that they should not license the cumulative plural. That this is indeed the case is confirmed by the sharp contrast that can be observed in the two minimal pairs in (73) and (74).

(73) a. I separated the Dutch, and the Greek, ambassador*(s) (dual reading)
b. I separated the Dutch, from the Greek, ambassador(*s) (dual reading)

(74) a. I compared the old, and the recent, photo*(s) of Alice. (dual reading)
b. I compared the old, to the recent, photo(*s) of Alice. (dual reading)

We now turn to the question of whether the nominal cumulative plural permits an analysis in terms of multiple agreement, on a par with Grosz's (2015) analysis of the verbal cumulative plural. That is, could it be that the plural in an example like (63a) is the result of the noun bottle agreeing with two singular determiners (or two singular number heads)? As it turns out, there is strong evidence that an analysis along these lines cannot be right. Whenever either of the conjuncts contains an element that overtly agrees in number with the noun, cumulative plural marking is ruled out. For example, demonstratives in English agree with the noun in number, and when the conjuncts in the subject are introduced by demonstratives, the dual reading requires the absence of plural marking:

(75) a. This green and that blue bottle(*s) are standing on the table. (dual reading)
b. *This green and these blue bottles are standing on the table. (dual reading)

The same can be observed with the indefinite singular article *a*, and with the numeral *one*:

(76) a. A green and a blue bottle(*s) are standing on the table. (dual reading)
b. The one green and the one blue bottle(*s) are standing on the table.
c. One green and one blue bottle(*s) are standing on the table.

By contrast, possessive pronouns and *whichever*, both number-neutral, permit a dual reading, just like number-neutral *the*:

(77) a. His green and her blue bottles are standing on the table. (dual reading)
b. Whichever red and whichever blue bottles are standing on the table, they need to be replaced by purple ones. (dual reading)

It would be hard to maintain that cumulative plural marking is a consequence of multiple singular agreement when it is blocked in case the relevant agreement relations have a morphological reflex.

The data in (76) and (77) fall out from our proposal. Number-sensitive modifiers like *this* and *that* have uninterpretable number features (that is, their number features are in a location that does not permit interpretation). Consequently, syntactic agreement with the noun is necessary to circumvent a violation of full interpretation. This implies that number-sensitive modifiers can only be licensed under right-node-

raising-as-ellipsis. However, the rule in (68) requires right-node-raising-as-multi-dominance, and is therefore blocked in the presence of number-sensitive modifiers.

There is, of course, a contrast between the situation in the noun phrase and the situation described earlier for verbal right-node raising. In (78) there are two singular categories that normally control agreement (*John* and *Bill*), but nonetheless cumulative plural marking is possible. Note, however, that in this case the number features in question are interpretable, and therefore not dependent on syntactic agreement.

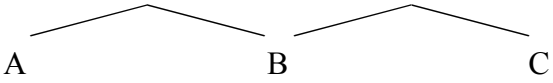
(78) Mary is proud that John, and Sue is glad that Bill, have travelled to Cameroon.

In sum, the distribution of the nominal cumulative plural can be understood from the following familiar assumptions: (i) right-node raising is ambiguous between ellipsis and multi-dominance, (ii) multi-dominance loops can only be created under conjunction, (iii) cumulative plurals are semantic rather than syntactic in nature, and (iv) cumulative plurals are blocked where syntactic agreement is available.

5. Concluding Remarks: The Distribution of Multi-Dominance

We started this paper by asking under what circumstances universal grammar permits multi-dominance. Much of the literature assumes few restrictions. As Citko 2005 and Van Riemsdijk 2006 point out, the system of merge developed in Chomsky 2004 would have to be amended by additional constraints to rule out multi-dominance. Chomsky argues that merge automatically gives rise to movement (via 'internal merge'). However, the same freedom of application that allows merge to generate movement configurations also allows merge to generate multi-dominance trees. The fact that multi-dominance comes for free in Chomsky's system has led to its being used in the analysis of a wide range of phenomena – basically anywhere where a single element simultaneously fulfils requirements imposed by two or more other elements.

Our view is less liberal. While we allow multi-dominance as a general option, we have argued that there are limitations on its distribution, at least in the case of right-node raising. These follow from the hypothesis, argued for in section 3, that a partial structure like (79a) must be mapped onto the semantic representation in (79b). That is, multi-dominance structures trigger the introduction of semantic coordination.

(79) a. 

b. ⟦A⟧^⟦B⟧ AND/OR ⟦A⟧^⟦C⟧

As a consequence, the two roots in (79a) can end up as part of a multi-dominance loop only if closure of that loop involves the mapping of a syntactic coordinator onto the semantic coordinator introduced in (79b). Any other type of closure violates the assumption that semantic representations are built up incrementally.

In the domain of right-node raising, we have encountered several data sets that confirm the link between coordination and multi-dominance loops. These all show that properties indicative of multi-dominance are absent in non-coordinate structures. This includes the licensing of internal readings of relational adjectives, cumulative plural and unexpected wide scope.

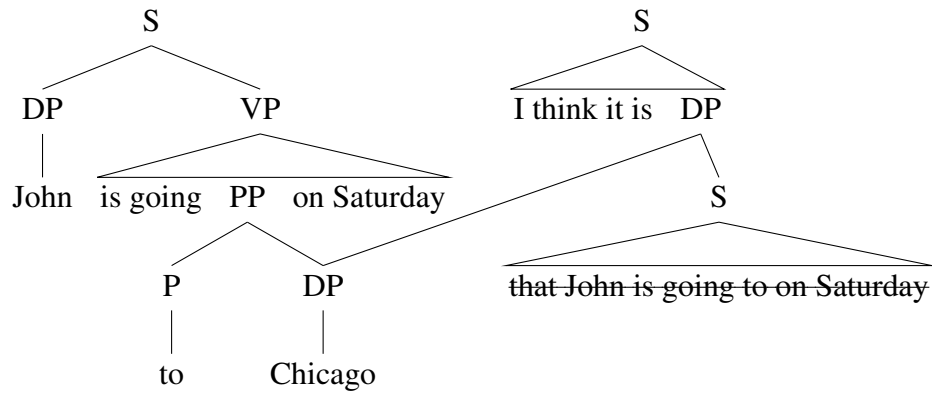
Note, however, that nothing in this proposal requires that the root nodes in (79a) be eventually included in a multi-dominance loop. That is, while there is a restriction on how loops can be created, nothing forces the creation of loops. This allows syntactic representations in which two otherwise unconnected trees share a constituent. There is in fact a wealth of literature that argues for the existence of such structures (see Lakoff 1974, Van Riemsdijk 1998, 2000, 2001, 2006, Tsubomoto and Whitman 2000, Guimarães 2004, Kluck 2008, and De Vries 2009, among others). So-called *Horn amalgams* are an example (see (80a)). Van Riemsdijk argues that Horn amalgams consist of a host sentence and a qualifying sentence that share a constituent (which we will call the pivot). Subsequent work by Guimarães 2004 and Kluck 2008 has established that the qualifying sentence is (or rather contains) an *it* cleft that has been reduced through sluicing, as in (80b).

(80) a. John is going to, I think it's Chicago on Saturday.

b. John is going to Chicago on Saturday.
I think it is ~~that John is going to on Saturday~~.

We can represent the resulting structure as in (81).

(81)



There is a strong case for multi-dominance. First, Van Riemsdijk demonstrates that the structure of the qualifying sentence is invisible for operations in the host sentence. This property of 'transparency' is illustrated below for binding (see (82)), idiomatic interpretation (see (83)), and movement (see (84)). These data follow straightforwardly if the material marked through wavy underlining is not part of the host sentence.

(82) a. They$_1$ live in, don't the Americans call it [each other]$_1$'s backyard?
b. She$_1$ was, I think you might call it proud of herself$_1$.

(83) a. They didn't make a lot of, I think the correct term is headway.
b. Bill kicked, I seem to remember you call it the bucket.

(84) a. Who$_1$ did they publish, I believe it was a dirty picture of t_1?
b. What conversation$_1$ did John make, I think it very probably was an unauthorized recording of t_1?

Van Riemsdijk also shows that the pivot must meet inflectional restrictions imposed on it by the host sentence, as well as by the qualifying sentence. One phenomenon illustrating this involves morphological case in German. As Van Riemsdijk demonstrates, Horn amalgams are grammatical in German only if the case requirements imposed by the host sentence and the qualifying sentence match. Thus, (85a) is ungrammatical, because 'soothsayer' cannot be simultaneously nominative and accusative, but (85b) is well formed, because the host sentence and the qualifying sentence both require the pivot to appear in the accusative.

(85) a. *Er hat sich, ich glaube das nennt$_{NOM}$ sich ein$_{NOM}$/einem$_{DAT}$ Wahrsager
he has refl. I believe that calls refl. a soothsayer
anvertraut$_{DAT}$.
trusted
'He entrusted himself to, I believe it is called a soothsayer.'

b. Er hat sich, ich glaube das nennt$_{ACC}$ man einen$_{ACC}$ Wahrsager
he has refl. I believe that calls one a soothsayer
angelacht$_{ACC}$
engaged
'He has gotten himself, I believe you call it a soothsayer'

The obligatory match of inflectional requirements is predicted by the hypothesis that the pivot appears in both the host sentence and the qualifying sentence.

There is also strong evidence that in Horn amalgams no multi-dominance loop is created. Kluck (2008) shows that host sentence and the qualifying sentence behave like independent root domains. She also shows that the qualifying sentence is not in the scope of operators in the host sentence, except for the pivot. These facts follow straightforwardly if the host sentence and the qualifying sentence have undominated root nodes.[11]

Note that the absence of a multi-dominance loop also predicts that some of the tests for multi-dominance applicable in the case of right-node raising do not extend to Horn amalgams. It is not possible for the shared element to take scope over both the host sentence and the qualifying sentence, because there is no node that dominates these sentences. This implies, for example, that Horn amalgams should not license internal readings of relational adjectives, as opposed to right-node raising. This is correct. The example below cannot mean that John is going to the same city that I think he is going to.

(86) *John said that he was going to, I think it was the same$_{INT}$ city.

We now consider the interpretation of Horn amalgams, and specifically the question of how the host sentence and qualifying sentence are related. First, consider

[11] Kluck (2008) suggests that the qualifying clause is a parenthetical in the host clause. This may mean that there is a structural connection, but not one of regular domination (see Ackema and Neeleman 2004 and De Vries 2007 for discussion).

the example in (87a). A speaker who utters (87) is committed to the truth of the host, as well as the qualifying sentence.

(87) John is going to, I'm sorry to say it's Chicago on Saturday.

This interpretation is trivially compatible with our claim that multi-dominance triggers the introduction of a coordinator. In the case at hand, the coordinator would have to be conjunctive:

(88) [JOHN IS GOING TO CHICAGO ON SATURDAY] AND [I AM SORRY TO SAY THAT IT IS CHICAGO THAT JOHN IS GOING TO ON SATURDAY].

The more common, and more interesting case involves Horn amalgams in which the qualifying sentence introduces a hedge. For example, (81a) implies that if John is not going to Chicago, then at least he is going to a city that the speaker thinks is Chicago. An interpretation along these lines is also compatible with the assumption that multi-dominance triggers the introduction of a coordinator, namely if the coordinator in question is disjunctive:

(89) [JOHN IS GOING TO CHICAGO ON SATURDAY] OR [I THINK THAT THE CITY THAT JOHN IS GOING TO ON SATURDAY IS CHICAGO]

An honest speaker must be committed to the second conjunct in (89), as it is a weaker assertion than the first conjunct. If I honestly assert that John is going to Chicago on Saturday, then I must think that the city that John is going to on Saturday is Chicago. However, if I merely *think* that the city that John is going to on Saturday is Chicago, I am not able to assert that John is going to Chicago on Saturday. Therefore, for (89) to make sense, the speaker must commit to the proposition in the second conjunct. But if this is the case, it follows from the semantics of disjunction that the speaker need not commit to the assertion in the first conjunct – exactly the hedge that Horn amalgams give rise to.

In line with this, Horn amalgams that introduce hedges allow a paraphrase in which the qualifying sentence is introduced by *or*. We illustrate this below for the examples in (82)-(84):[12]

[12] The fact that the qualifying sentence can be a question, as in (82a) suggests that Horn amalgams that express hedges must be disjunctions of speech acts. Consider an example like *John is going to, is it Chicago?* This is interpreted roughly as [I ASSERT THAT JOHN IS GOING TO CHICAGO] OR [I ASK WHETHER IT IS CHICAGO THAT JOHN IS GOING TO]. As before, the second conjunct is weaker and must

(90) a. They$_1$ live in [each other]$_1$'s backyard. Or don't the Americans call it [each other]$_1$'s backyard?

b. She$_1$ was proud of herself$_1$ or I think you might call it proud of herself.

c. They didn't make a lot of headway. Or I think the correct term is headway.

d. Bill kicked the bucket. Or I seem to remember you call it the bucket.

e. Who$_1$ did they publish a dirty picture of t_1? Or I believe it was a dirty picture.

f. What conversation$_1$ did John make an unauthorized recording of t_1? Or I think it was very probably an unauthorized recording.

This account solves a problem identified in Kluck 2008. In standard multi-dominance analyses of Horn amalgams, the host sentence and the qualifying sentence are semantically independent assertions, which means that the speaker of an example like (80a) should commit to the truth of both conjuncts. But that implies a claim that John is in fact going to Chicago – in other words, the hedging effect typical of Horn amalgams remains unexplained.

Horn amalgams do not permit non-coordinate interpretations. To see this, consider the example in (91), which is acceptable as a hedged statement on the reading in (91a). This reading is somewhat marginal because it is peculiar to hedge the content of one's knowledge. Potentially, there are perfectly reasonable alternative interpretations of the example, however. It could be that I knew that John was going to Chicago because (or after) I heard it. Or it could be that I knew that John was going to Chicago before I heard it. As predicted, those interpretations are not there.

(91) I knew that John was going to, I heard it was Chicago.

a. ?'I knew that John was going to Chicago, or I heard that it was Chicago that John was going to.'

b. *'I knew that John was going to Chicago, because I heard that it was Chicago that John was going to.'

c. *'I knew that John was going to Chicago, before/after I heard that it was Chicago that John was going to.'

---

therefore hold. If I honestly assert that John is going to Chicago, I know the answer to the question whether he is going there. However, if I wonder whether John is going to Chicago, I cannot honestly assert that he is going there. Consequently, the speaker must remain uncommitted to the proposition in the first conjunct, as required.

In conclusion, the hypothesis that multi-dominance requires the introduction of a semantic coordinator not only captures the fact that multi-dominance loops can only be created under coordination, but is also compatible with the interpretations available for Horn amalgams, which we take to be representative of multi-rooted multi-dominance structures.

One striking implication of our proposal is that movement cannot be modelled using multi-dominance. Since traces must be c-commanded by their antecedents, movement would have to involve a multi-dominance loop, and therefore syntactic coordination. This is obviously not true.

It is perhaps ironic that a theory permitting multi-dominance should rule out a multi-dominance account of movement. After all, the resurgence of multi-dominance in recent syntactic analysis began with the development of multi-dominance theories of movement (see, for instance, Starke 2001 and Gärtner 2002). However, we should note two things (for discussion, see Neeleman and Van de Koot 2010). First, the multi-dominance theory of movement faces certain difficulties, for instance in accounting for Barss's Generalization or for the c-command requirement on chain formation. Second, a system of external and internal merger is not the only way in which the theory of syntactic dependencies can be unified with phrase structure theory. It may well be, then, that the proposed link between coordination and multi-dominance makes the right cut.

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References

Abels, Klaus. 2004. Right Node Raising: Ellipsis or Across the Board Movement. In K. Moulton and M. Wolf (eds.) *Proceedings of NELS 34*. Amherst, MA: GLSA. (pp. 45–59)

Ackema, Peter, and Ad Neeleman. 2004. *Beyond Morphology; Interface Conditions on Word Formation*. Oxford: OUP

Bachrach, Asaf, and Roni Katzir. 2007. Spelling out QR. In E. Puig-Waldmüller (ed.) *Proceedings of Sinn und Bedeutung 11*. Barcelona: Universitat Pompeu Fabra. (pp. 63–75)

Bachrach, Asaf, and Roni Katzir. 2009. Right-Node Raising and Delayed Spellout. In K. Grohmann (ed.) *Interphases: Phase-Theoretic Investigations of Linguistic Interfaces*. Oxford: OUP. (pp. 283–316)

Barker, Chris. 2007. Parasitic Scope. *Linguistics and Philosophy* 30: 407–444.

Barlow, Michael. 1992. *A Situated Theory of Agreement*. New York: Garland.

Barros, Matthew, and Luis Vicente. 2011. Right Node Raising Requires both Ellipsis and Multidomination. In *University of Pennsylvania Working Papers in Linguistics*, Volume 17; Issue 1; Article 2.

Bošković , Željko. 2004. Two Notes on Right Node Raising. In M. Rodríguez-Mondoñedo and M.E. Ticio (eds.) *University of Connecticut Working Papers in Linguistics* 12 (pp. 13–24)

Bošković, Željko, and Steven Franks. 2000. Across-the-Board Movement and LF. *Syntax* 3: 107–128.

Brody. Michael. 1997. Perfect Chains. In: L. Haegeman (ed.), *Elements of Grammar*. Dordrecht: Kluwer. (pp. 139-167)

Carlson, Greg. 1987. *Same* and *Different*: Some Consequences for Syntax and Semantics. *Linguistics and Philosophy* 10: 531–565.

Citko, Barbara. 2005. On the Nature of Merge: External Merge, Internal Merge, and Parallel Merge. *Linguistic Inquiry* 36: 475–496.

Chomsky, Noam. 2004. Beyond Explanatory Adequacy. In A. Belletti (ed.) Structures and Beyond. Oxford: Oxford University Press. (pp. 104–131)

Corbett, Greville. 1979. The Agreement Hierarchy. *Journal of Linguistics* 15: 203–224.

Den Dikken, Marcel. 2001. Pluringulars, pronouns and quirky agreement. *The Linguistic Review* 18: 19–41.

De Vos, Mark, and Luis Vicente. 2005. Coordination under Right Node Raising. In John Alderete et al. (eds.) *Proceedings of WCCFL 24*. Somerville: Cascadilla Press. (pp. 97–104)

De Vries, Mark. 2007. Invisible Constituents? Parentheticals as B-Merged Adverbial Phrases. In N. Dehé and Y. Kavalova (eds.) *Parentheticals*. Amsterdam: John Benjamins. (pp. 203–234)

De Vries, Mark. 2009. On Multidominance and Linearization. *Biolinguistics* 3: 344–403.

Elbourne, Paul. 1999. Some correlations between semantic plurality and quantifier scope. In *Proceedings of NELS 29*, 81–92.

Fiengo, Robert, and Robert May. 1994. *Indices and Identity*. Cambridge, MA: MIT Press.

Gärtner, Hans Martin. 2002. *Generalized Transformations and Beyond: Reflections on Minimalist Syntax*. Berlin: Akademie Verlag.

Gazdar, Gerald, Ewan Klein, Geoffrey Pullum and Ivan Sag. 1985. *Generalized Phrase Structure Grammar*. Cambridge, MA: Harvard University Press.

Goodall, Grant 1987. *Parallel Structures in Syntax*. Cambridge: Cambridge University Press.

Grosz, Patrick. 2015. Movement and Agreement in Right-Node-Raising Constructions. *Syntax* 18: 1–38

Guimarães, Maximiliano. 2004. Derivation and Representation of Syntactic Amalgams. PhD dissertation, University of Maryland.

Ha, Seungwan. 2008. *Ellipsis, Right Node Raising, and Across-the-Board Constructions*. Doctoral Dissertation, Boston University.

Hartmann, Katharina. 2000. *Right Node Raising and Gapping: Interface Conditions on Prosodic Deletion*. John Benjamins: Amsterdam.

Hirsch, Aron, and Michael Wagner. 2015. Right Node Raising, Scope, and Plurality. In T. Brochhagen et al. (eds.) *Proceedings of the 20th Amsterdam Colloquium* (pp. 187–196).

Huddleston, Rodney, and Geoffrey K. Pullum. 2002. *The Cambridge Grammar of the English Language*. Cambridge: Cambridge University Press.

Hudson, Richard. 1976. Conjunction Reduction, Gapping, and Right Node Raising. Language 52:535–562.

Jackendoff, Ray. 1977. X' Syntax: A Study of Phrase Structure. Cambridge, MA.: MIT Press.

Kluck, Marlies. 2008. *Sentence Amalgamation*. PhD dissertation, University of Groningen.

Lakoff, George. 1974. Syntactic Amalgams. In Michael Galy et al. (eds.) *Papers from the 10th Regional Meeting of the Chicago Linguistic Society*. Chicago: University of Chicago. (pp. 321–344).

McCloskey, James. 1986. Right Node Raising and Preposition Stranding. *Linguistic Inquiry* 17:183-186.

Neeleman, Ad, and Hans van de Koot. 2010. A Local Encoding of Syntactic Dependencies and its Consequences for the Theory of Movement. *Syntax* 13: 331–372.

Neeleman, Ad, and Hans van de Koot. 2012. Towards a Unified Encoding of Contrast and Scope. In A. Neeleman, and R. Vermeulen (eds.). *The Syntax of Topic, Focus and Contrast: An Interface-Based Approach*. Berlin: De Guyter Mouton. (pp. 39-75)

Neijt, Anneke. 1979. *Gapping; A Contribution to Sentence Grammar*. Dordrecht: Foris.

Pollard, Carl, and Ivan Sag. 1994. *Head-driven Phrase Structure Grammar*. Chicago: University of Chicago Press.

Postal, Paul. 1998. *Three Investigations of Extraction*. Cambridge, MA: MIT Press.

Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech, and Jan Svartvik. 1985. *A Comprehensive Grammar of the English Language*. London: Longman.

Reinhart, Tanya. 1983. *Anaphora and Semantic Interpretation*. London: Croom Helm.

Reuland, Eric. 2011. *Anaphora and Language Design*. Cambridge, MA: MIT Press.

Ross, John Robert. 1967. *Constraints on Variables in Syntax*. PhD dissertation, MIT.

Sabbagh, Joseph. 2007. Ordering and Linearizing Rightward Movement. *Natural Language and Linguistic Theory* 25: 349–401

Sauerland, Uli, and Paul Elbourne. 2002. Total Reconstruction, PF Movement, and Derivational Order. *Linguistic Inquiry* 33: 283-319.

Shieber, Stuart. 1986. *An Introduction to Unification-Based Approaches to Grammar*. Stanford: CSLI.

Smith, Peter W. 2015. *Feature Mismatches: Consequences for Syntax, Morphology and Semantics*. PhD dissertation, University of Connecticut.

Starke, Michal. 2001. *Move Dissolves into Merge: A Theory of Locality*. PhD Dissertation, University of Geneva.

Tsubomoto, Atsurô, and John Whitman 2000. A Type of Head-in-Situ Construction in English. *Linguistic Inquiry* 31: 176–182

Van Riemsdijk, Henk. 1998. Trees and scions – science and trees. In *Festwebpage for Noam Chomsky*. Cambridge, MA: MIT Press.

Van Riemsdijk, Henk. 2000. Free Relatives Inside Out; Transparent Free Relatives as Grafts. In Bozena Rozwadowska (ed.) *Proceedings of the 8th Annual Conference of the Polish Association for the Study of English*. Wroclaw: Aksel. (pp. 223–233)

Van Riemsdijk, Henk. 2001. A Far from Simple Matter. In Istvàn Kenesei and Robert M. Harnish (eds.) *Perspectives on Semantics, Pragmatics and Discourse*. Amsterdam: John Benjamins.

Van Riemsdijk, Henk. 2006. Grafts Follow from Merge. In Mara Frascarelli (ed.) *Phases of Interpretation*. Berlin: Mouton de Gruyter. (pp. 17–44)

Yatabe 2003. A Linearization-Based Theory of Summative Agreement in Peripheral-Node Raising Constructions. In J.-B. Kim & S. Wechsler (eds.) Proceedings of the 9th International Conference on HPSG. Stanford: CSLI. (pp. 391–411

Wilder, Chris. 1999. Right Node Raising and the LCA. In S. Bird et al. (eds.) *Proceedings of WCCFL 18*. Somerville: Cascadilla Press. (pp. 586–598)

Whitman, Neal. 2009. Right-Node Wrapping: Multimodal Categorial Grammar and the "Friends in Low Places" Coordination. In Erhard Hinrichs and John Nerbonne (eds.) *Theory and Evidence in Semantics*. Standford: CSLI. (pp. 235–256)

Williams, Edwin. 1978. Across-the-Board Rule Application. *Linguistic Inquiry* 9: 31–43.